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WHIRRAKEE

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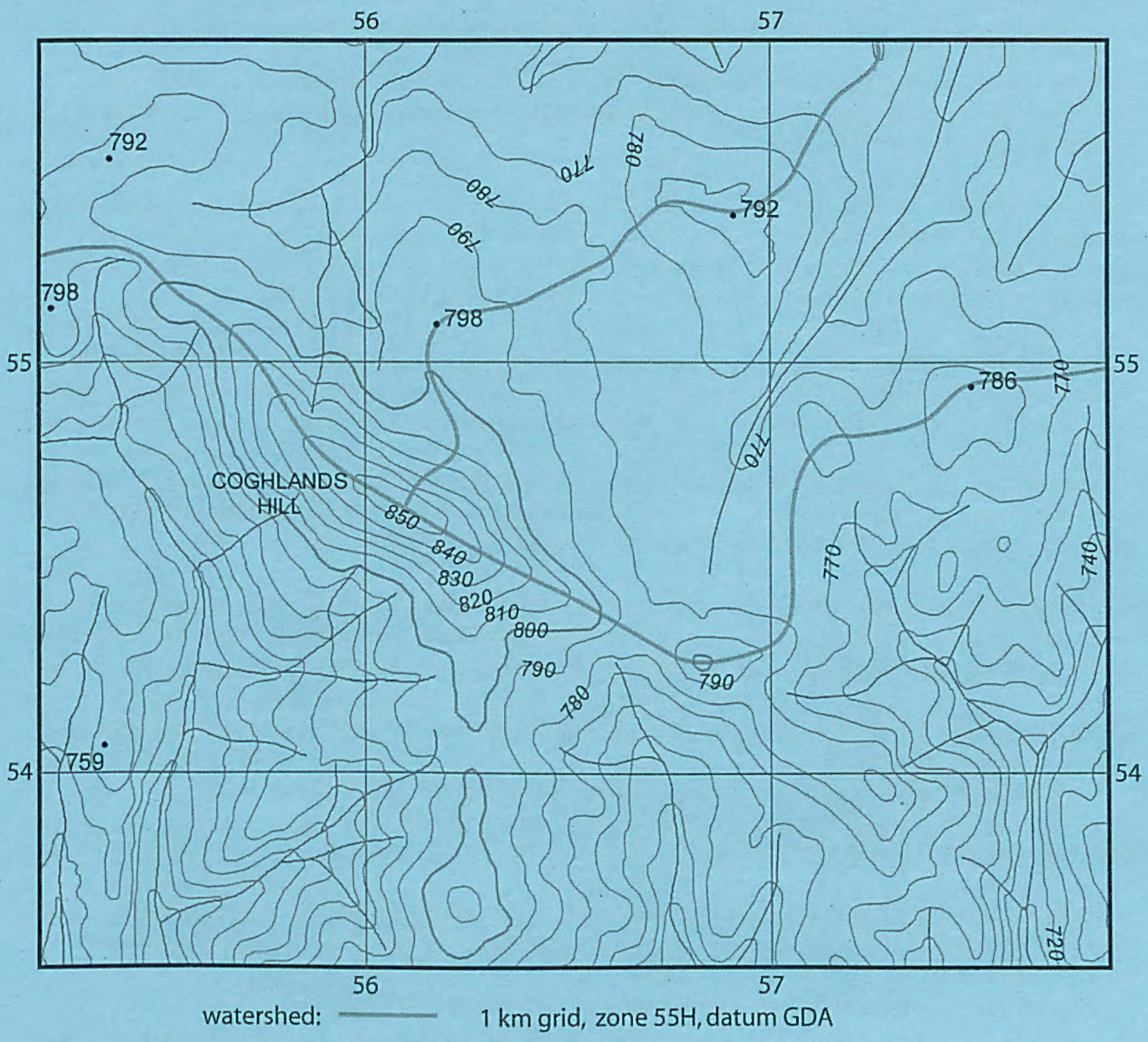

watershed: 1 km grid, zone 55H, datum GDA

MONTHLY NEWSLETTER OF THE BENDIGO FIELD NATURALISTS CLUB

Bendigo Field Naturalists Club Inc.
Address for correspondence: PO Box 396, Bendigo 3552
ISSN 0812-423X

Office Bearers for 2010 - 2011

President	Jan Orr	5443 5668
Senior Vice President	Matthew Comer	0409 162627
Junior Vice President	*position vacant*	
Secretary	Anne Bridley	5442 6188
Minute Secretary	Joy Clusker/Rod Orr	
Treasurer	Ben Goonan	
Membership Officer	Anne Bridley	5442 6188
Excursion organiser	*position vacant*	
Syllabus organiser	Ben Goonan	
Librarian	Diana Collier (an assistant is still required)	5443 0137
Garden Convenor/Secretary	Matthew Comer	0409 162 627
Hall Management	Maurie Lewis (assisted by Rob Moors)	0407 427179
Whirrakee contact	Sabine Wilkens e-mail: s.wilkens@latrobe.edu.au	5443 2797

Membership of the Bendigo Field Naturalists Club is open to all those interested in Natural History. The subscription rates are: Single $34; Family $40; Concession: Single $28.50; Family $34. *Whirrakee* subscription only is $34.

General meetings are held on the second Wednesday of each month. The venue for General meetings is the Golden Square Senior Citizens Building, Old High Street, Golden Square. The meeting starts with a 10 minute thing-of-the night natural history segment. The invited speaker starts at 8:00pm and meetings conclude with supper. The Annual Meeting is held in September.

Committee meetings are held on the third Wednesday of each month at 6:00pm. Members of the Committee are the Office Bearer listed above and the following members: Stuart Fraser, Glenise Moors, Joy Clusker, Bill Holsworth, Bev Culvenor, John Lindner, Kerrie Norris.

Excursions are conducted regularly and are advertised on the diary page of the *Whirrakee*. The assembly point for excursions is the Golden Square Senior Citizens Building, unless otherwise specified. Several interclub field naturalist campouts are held every year.

The Bendigo Field Naturalists Club has one sub-group (the Fauna Study Group) and is actively involved in local conservation issues. An **indigenous garden** has been established around the Golden Square Senior Citizens Building. Working bees are advertised on the *Whirrakee* diary page.

Fauna Study Group: meets on the fourth Wednesday of the month at 7:30pm in the Golden Square Senior Citizens Building.

Chairman: John Burtonclay, Fadersons Lane, Mandurang (5439 5710)
Secretary: Bill Holsworth, 13 Nabilla Crs., Bendigo (5443 4063)
Equipment Officer: Maurie Lewis (0407 427179)

Bird Observing: Club members conduct regular bird surveys. Please contact Anne Bridley 5442 6188 or Glenise Moors 5439 6254 for details. Special bird observations should be reported to Anne Bridley 5442 6188.
To propose bird observing excursions please contact Kerrie Norris 5447 8017.

Front cover photo?...see page 2

WHIRRAKEE

Monthly Newsletter of the Bendigo Field Naturalist Club

Vol. 32, No. 4, May 2011

Whirrakee takes its name from the Whirrakee Wattle (*Acacia williamsonii*) which is virtually endemic to the Bendigo region

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Authors are responsible for the accuracy of the information they use and also for any opinions expressed in their articles. Contributions will be included as soon as possible after they are received, although articles received more than one week after the monthly General Meeting will probably be too late for inclusion in the next issue of *Whirrakee*.
Articles in *Whirrakee* may be reproduced, but permission should be obtained from the Bendigo Field Naturalists Club, and acknowledgment should be given to the author and the Club. Some back issues are still available on request.

Editor's Note
It was hard to predict how Bendigo's autumn weather would turn out in this strange year. At present it is fantastic, and it is bringing out wonderful sights, as seen in the colour photographs on page 4-7. Many members would have already seen Autumn Greenhoods by now, because, as Rod Orr says, they are actually flowering normally this year – in Autumn. However, for those (like me) who haven't spotted them in the wild, there is a great photo on page 7. My favourites this month are the examples of camouflage on page 4. The green, leaf-like katydid would be practically invisible, if it sat in the 'right' plant, but the brown one is even more amazing to me. We also have more spider images, so this spidery season is still not over. The webs interest me even more after reading the book 'Spider Silk' by Leslie Brunetta and Catherine Craig. Hopefully I will have a few extracts in the next Whirrakee, but it is also available in the Goldfields library. I am certain that the next few weeks will generate more good excursions and photographs, and then… it's fungi season again.

Front page image: This map (Figure 2), the enlarged inset of Figure 1 in the text on page 9, shows the junction of the Campaspe – Loddon, Campaspe – Werribee and Loddon – Werribee Watersheds, and it goes with the article ' A three-catchment problem' by Mal Haysom. Enjoy!

Short Notices

Garden Working Bee
Over the autumn, there will be two working bees in the club garden
Saturday 7th May and Saturday 4th June
Both start at 1pm
All are welcome

Updating Flora and Fauna Database
Australian Ecosystems/DSE requests Flora & Fauna Records to include in an updated Database (by early June!).
Contact Karl Just: 0434815374

Remnant Native Vegetation Investigation
The VEAC Final Report for this investigation has been received by BFNC. Comments can be directed to the Minister for Environment and Climate Change, the Hon Ryan Smith MP. Under the VEAC act, the Government is required to respond towards the end of this year. The report can be downloaded from www.veac.vic.gov.au , but Anne Bridley also has a number of copies.

50th Anniversary celebrations
SEANA & its foundation groups celebrate 50 years of activity this year. Jane Cleary has offered Bendigo as the venue for a small celebration of this occasion (Saturday 23 July & Sunday; dinner at Foundry Arms; display in meeting room; Sunday excursion. Request for an organising/planning committee to attend to the details of the event. If you are willing and able to help out with the planning of this event, please contact Jane Cleary.

Report on April Workshop on Native Grasses

Instead of a speaker for our April general meeting, a workshop had been organized to help members with native grass identification. Matthew Comer introduced the general taxonomy of grasses and the specialized terminology associated with grass anatomy that is needed for identification. With 1300 species in Australia, grasses are important ecologically and economically, as they provide food and shelter for many animals (native and stock) and are valuable ground cover for soil conservation. Some endangered animals are dependent on specific species (for example the Golden Sun Moth caterpillar depends on the roots of Wallaby Grass). Matthew also introduced some specialized anatomical terms like culm, node, inflorescence, awn, callus, palea, lemma, rachilla, glumes and ligule as these were needed in the main (next) part of the workshop.

For this next part, Ben Goonan and Jan Orr organised the audience into four groups and explained the format of the evening's activities. This consisted of the groups rotating through each of the four work stations, each managed by an experienced Field Naturalist. The four leaders were Matthew Comer, Pat Ward, Ben Goonan and Rod Orr and they all showed a slightly different approach to grass identification. The intention was to give every participant sufficient knowledge and understanding, at the very least to be able to distinguish between Wallaby Grasses and Spear Grasses and to recognise these, when mixed in with other grasses in the environment.

The atmosphere in the room was very positive and enthusiastic and everyone seemed to be involved and very keen to observe, ask questions, offer comments and to learn as much as possible about native grasses in the short time available (the short time available was indeed a minor source of complaint!). The organisers and leaders felt that this was a very worthwhile initiative and the suggestion has already been made that other similar workshops should be organised to cover different areas of interest.
Jan thanked the table leaders, Ben, Matthew, Pat and Rod, who all had a slightly different approach to uncovering the secrets of grass identification. Most participants would have liked more time at each station and we could have gone on till midnight... that must a very good measure of a successful workshop.

Some less often (or never) seen invertebrates

The photographer, Merrilyn Little, found these two katydids. The green one on the left was seen in April in her Central Bendigo garden and only noticed due to its soft chirping sounds. Upon closer inspection, there were quite a few on that *Thryptomene* bush. The brown one on the right is fantastically camouflaged amongst the leaf litter at Skylark Dam, (photographed in Spring 2010). Would anybody know its name? ↓

Gum Leaf Katydid (*Tobia viridissima*)

In early December, Rod and Jan Orr revisited a spot where these leek orchids grow. It was late in their flowering season and not many were worth photographing, but, this one had a really attractive little spider waiting for its next meal and watching its photo being taken.

←
Prasophyllum sp. aff. *validum* with Flower Spider (*Diaea evanida*)

→
This cockroach was spotted by Joy Clusker under a log during the April bird count at the sewerage farm

More unknown spiders Photographer: Caitlyn Lehman

This photograph was taken at Lake Linlithgow (near Hamilton) in Oct 2010 towards the end of the spiders' appearance (not that you'd guess it from their number!) This (unidentified) spider species was quite a phenomenon in the region, causing paddocks to appear covered in the mist with a mass of web. All the spiders seemed to be aiming for high points, presumably in order to let off silk strands to be caught by the wind. Then again, some were quite big, so maybe not! A most odd and striking sight. What o you think? Is this a communal spider or young spiderlings prior to dispersal?

Above are two more images of Caitlyn Lehman's other unidentified spider, first shown in the April *Whirrakee*. Does anybody have any suggestions as to the name of this interesting-looking species?

April club excursion to the Bendigo sewerage farm Photographer: Joy Clusker

it is hard to avoid spiders this year, here is an image of their deeds – a dragonfly caught in a web.

← *Coprinus comatus* had just emerged and was dripping red liquid which later becomes black with spores as it auto-digests. A red drop can still be seen at the base of the stem.

Anthela moth caterpillar ↓

Now for some plants…

Wahlenbergia fluminalis, photographed by Rod Orr during the March excursion to Bridgewater. They were growing alongside the road to Newbridge. Clouds of moths (mostly *Utetheisa* sp.) were feeding and resting among these bluebells. ↓

Diplodium revolutum or *Pterostylis revoluta* ↑
The photo of the Autumn Greenhood was taken by Crawford Mouat on March 24 in the Mandurang Forest. The flower was part of a colony of about ten others.

Hyacinth Orchids

(Photos and text by Rod Orr)

The left species has been considered different enough to be separated out from our locally occurring Hyacinth Orchid - on the right, (*Dipodium roseum*), which has a pink colour overall with darker pink spots and blotches. ←

Dipodium pardalinium, ↑ is white with purplish-pink blotches. It occurs fairly close to Bendigo in the forests near Daylesford and flowers during Summer. *Continued over the page…*

Hyacinth Orchids are usually found growing in forests where fibrous barked eucalypts (Messmate & various Stringybark species) are common. There seems to be a close association between them, which is poorly understood and, no doubt, there is a mycorrhizal fungus involved as well, which is favoured by such an association.

The orchids are leafless with a brownish-green stem and probably don't photosynthesise much, if at all - they are sometimes referred to as saprophytic but this activity is much more a characteristic of fungi so it would be more accurate to refer to the associated fungi as the saprophytes. Attempts to cultivate or relocate orchids in this genus have been unsuccessful. There are lots of unanswered questions about these orchids and plenty of opportunities for research.

Notes and Observations

compiled by Rod Orr

Bev Culvenor showed the meeting a Brown Quail, which she had found dead outside her property in Bendigo. It seemed to have suffered no obvious damage and was in very good condition (for a dead and frozen Brown Quail, that is). Others offered recent observations of Brown Quail within the city boundaries - we all wondered why there had been such an influx of these birds - unusual sightings in town.

Kerrie Norris brought an Olive Legless Lizard which had been disturbed while digging and ended up being killed.

Joy Clusker showed the meeting an egg, which had been found by Glenise during last weekend's Excursion & Bird Count at the Sewerage Ponds. The egg had been identified as a Noisy Miner's.

Glenise Moors reported a Collared Sparrowhawk (April 7th) that had found her family of Skinks, which lived in holes in the clay bank visible from her kitchen window. The hawk had waited patiently until a Skink emerged to be caught as prey. Glenise had also observed an immature Horsefields Bronze Cuckoo (13th of April).

Bird food in Peter's garden

from Peter Ellis

I have the Ruby Salt Bush *Enchylaena tomentosa* that comes up from seed naturally. I didn't plant it, but it appears it might have been accidentally introduced, when planting various indigenous and general native plants from local nurseries. I say this, because when I took a sprig to Marilyn Sprague for identification, she said, 'Oh this is the form from Swan Hill that extends down to Charlton!' It had yellowish, slightly orange fruits. But it's also on the vacant block next door and further down in Flora Lane on the ex mayor, Julie Rivendell's, nature strip.

Then, Marilyn drew my attention to a form from Yandoo with striking purplish fruits, which I immediately acquired and planted next to the above for colour contrast and both almost on the curb of Flora Lane. Not long after the Australia Day Concert evening at Goornong, as a performer, I got a Bendigo City Council nursery gift of the local reddish fruited form, which I planted round the back. Just the other day I noticed a reddish purple form at the base of my water tank, so they obviously reproduce and spread fairly well.

But what I have noticed (at the end of March), for the second time, two years running, are Magpies gobbling down the berries of the yellow-orange form. I can't say there's a significance with the colour, it's just that the older yellow form is fairly large and a well-laden plant.

A similar observation, about 18 months or more back, was a Crested Pigeon (Top Knot) gourmandising on the tiny red berries of *Atriplex semibaccata*, the Australian or Creeping Saltbush. Literally stripping them off and gulping them down in gobs full. I see via Google, you can make a jam from these fruits, if you can get enough. No likelihood I'd suggest with Crested Pigeons in the vicinity, and good on them.

A Three Catchment Problem [1]

Author: Mal Haysom

It is quite a three pipe problem, Watson, and I beg that you won't speak to me for fifty minutes,

Arthur Conan Doyle, *The Red Headed League*

A picnic party in the bush to the west of Taradale is disrupted by a rain squall. With a rug over her hair and around her shoulders, one of the picnickers braves the rain while the rest of the party huddle in the car and ask each other whose idea was it to go on a picnic. The outsider observes the rain trickling into pools and the overflow of the pools accumulating to form a rivulet in a gully. She muses on the fate of the water, certain that it will eventually join the Murray River, but undecided whether its passage will be the Campaspe or the Loddon River.

We are speaking of catchments. A workable definition of a catchment is an area with a single identifiable drainage outflow. The practical effect of this definition depends on where you stand. The manager of the barrage across the mouth of the Murray River would speak of the Murray catchment. The captain of the paddle steamer at Echuca might refer to the Campaspe catchment. The weir keeper at Eppalock would draw the distinction between the Campaspe and Coliban catchments. If we continued this process of successive refinement further upstream, ultimately we would, if we had selected a certain path and time, have found water overflowing from a temporarily abandoned picnic plate. It might well be said:

> Great catchments have little catchments on their back to feed 'em,
> And little catchments have lesser catchments, and so on *ad infinitum* [2]

Two neighbouring catchments meet along a watershed. A watershed generally runs along the top of a ridge, over peaks and along saddles. Rain falling on a watershed will run into one catchment or the other dependent upon whether the fall is marginally to one side or other of the watershed. The watershed between the Loddon and Campaspe catchments starts near Bullarto South and runs north towards Bendigo [fig 1] [3]. (I have not investigated its location beyond Bendigo.) Had the inquisitive picnicker of the opening paragraph had a map of the Campaspe-Loddon watershed to hand she would have been able to resolve her conundrum.

The headwaters of the rivers contributing to the Loddon and Campaspe catchments rise on the north side of the Great Dividing Range. On the corresponding south side of the range are the headwaters of the rivers that contribute to the Werribee catchment. Thus two more watersheds, the Werribee-Loddon and the Werribee-Campaspe are identifiable [fig 1].

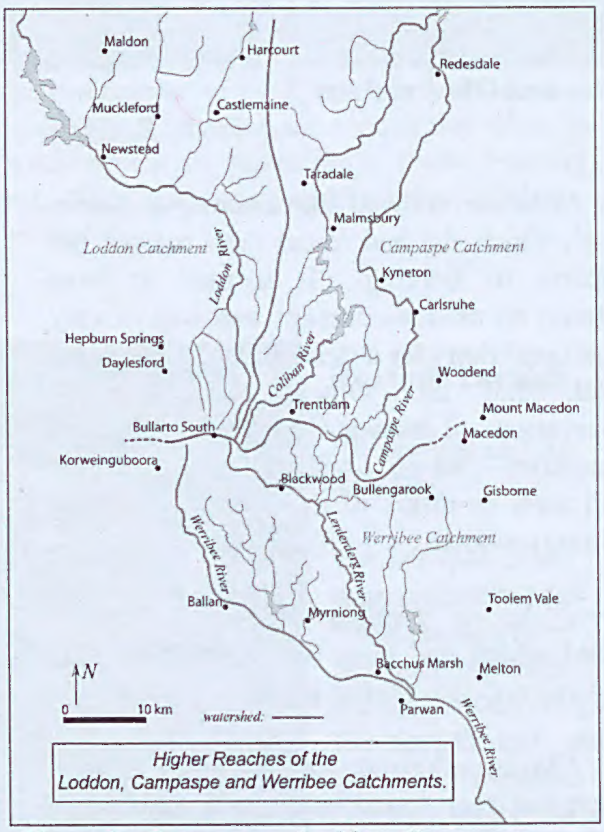

Figure 1: Campaspe – Loddon, Campaspe – Werribee and Loddon – Werribee Watersheds [3]

The three watersheds will meet at a point, termed here "tri-shed". Rain falling in the vicinity of this point will flow down into the Loddon, Campaspe or Werribee catchment depending on how the rain is marginally placed with respect to the tri-shed. (The

situation is somewhat analogous to a traveller standing on Poeppel Corner. A step due south would place her in South Australia, a step north-east would place her in Queensland and a step to the north-west would place her in the Northern Territory.) A tri-shed is a point (rather than an area) in the same sense that a summit is a point rather than an area. The precise determination of the point is scale and practicality dependent, analogous to the precise determination of a summit. Tri-sheds proliferate: there would be many (the number determined by the scale you select for the catchments) along the Great Dividing Range. Of course tri-sheds are not limited to the Australian continent. From my domestic atlas I can identify a South American tri-shed in the region of latitude 16 degree south, longitude 48 degree west, formed by the upper catchments of the Paranaiba, São Francisco and Tocantins rivers.

Fig 2 (front cover image) [4] shows the area near the Campaspe-Loddon-Werribee tri-shed on a larger scale. (Note: the convention on this map is that the contour values read the right way up when the reader is facing uphill.) The southern part of the map contains a number of creeks that contribute to the Werribee catchment. The two creeks contributing to the Campaspe catchment exit the study area near the north east corner of the map and those several creeks that are headwaters of the Loddon exit along the northern map boundary. The tri-shed is near the peak of Coghlands Hill. The contour spacing of 10 metres serves well for the country to the south of the peak – the gullies containing the creeks are well defined. However some interpretation is required to shape the flatter country to the north. In particular, the section of the Campaspe-Loddon watershed between the knoll with a spot elevation of 798 metres and the peak marked 792 metres warrants some discussion. I have, because of the two adjacent 780 metre contours, interpreted this section as a saddle with the lowest point a little under 780 metres. Thus the ground at the saddle falls to the north towards the 770 metre contour and to the south also falls towards (though not so directly) the 770 contour in the Campaspe catchment.

Fig 2 enables us to determine the location [5] of the tri-point with an uncertainty of perhaps 100 metres. A field inspection would establish the worth of this expectation.

Although tri-sheds are unique points, they do not appear to have any advantages as demarcation entities. They are no more precise than mountain peaks; in general considerably less so. Their significance is purely academic.

George Mallory's often quoted justification for attempting the climb of Mount Everest, "because it's there" [6] could be generalised to, "because it's identifiable". This generalisation would encompass past searches for the poles, the other side of deserts, inland seas, mouths of rivers, junctions of rivers and the source of rivers. The concept of tri-sheds adds another item to the list of identifiable geographical features. Because the majority of tri-sheds are yet to be identified and yet are implicitly defined (to some degree of precision) by map features (watercourses and contours) there is scope for armchair researchers to participate in the search for new tri-sheds. In addition, field researchers (or philosophical picnickers) can locate the actual points on the ground and make appropriate speeches.

References

[1] Concept first published as: *Three Catchments Define a Point*, The Australian Geologist, Mar 2001, No.118, pp 18-19

[2] Various sources, earliest Jonathan Swift 1733. The original rhyme, bite 'em – *ad infinitum*, is superior to my corrupted version.

[3] Derived from "Interactive Map" via http://www.land.vic.gov.au/

[4] Derived from "Vicmap Topo Maps 1:30000" via http://www.land.vic.gov.au/

[5] Datum GDA, UTM 55S 256093 5854569, MGRS 55H 56093 54569, 37° 25.42' S 144° 14.62' E.

[6] *The Oxford Dictionary of Modern Quotations*, Oxford Uni. Press, 1991 p. 145

Diary

The General, Bird Observers Group and Fauna Study Group meetings are held at the Golden Square Senior Citizens Building, Old High Street, Golden Square, unless otherwise indicated.

Wednesday, May 11 7.30pm
Associate Professor Alan York from the University of Melbourne will try and answer the question "What can ants tell us about fire management outcomes?"

Wednesday, June 8 7.30pm
Dr Pam Whiteley (Faculty of Veterinary Science, University of Melbourne) will talk about 'Wildlife health surveillance in Victoria'

Wednesday, July 13 7.30pm
A joint presentation by Dr Jason Goodger and Ms Allison Heskes (PhD candidate), both from the School of Botany, University of Melbourne: 'Botanical imaging in the 21st century: using lasers to unravel the mysteries of essential oil glands in eucalypts'.

Fauna Group
This group normally meets (in the clubrooms) on the fourth Wednesday of the month at 7.30pm. New and seasoned Club members are most welcome to attend.

Bendigo Family Nature Club
The Bendigo Sustainability Group, BDEC and BFNC will combine their approach to this. Three sessions have been conducted and they are gathering momentum. Many hands are needed on the days, so if you can help out, please contact Jan Orr. All activities will be held on 3rd Sunday of the month.

On May 22, the Family Nature Club is meeting at Kamarooka. If any member is willing to lend a hand on the day, please get in touch with Jan Orr.

Wildlife Rescue & Information Network Inc.
W.R.I.N. is an organisation dedicated to the care of orphaned, sick or injured native animals. It is fully endorsed by the Dept of Sustainability and Environment.
Please call our Emergency Number for Help for Fauna in Need. Phone: 0419 356433.

Biodiversity Across the Borders Conference
The theme for 2011 is ": VULNERABILITY AND RESILIENCE OF ECOSYSTEMS" The conference will be held at the Mt. Helen campus of the University of **Ballarat - 9th June, 2011.**
The keynote address will be delivered by Dr John Williams (Natural Resources Commission). Thus far we have identified the following general sub-themes to be covered at the conference:
*Detecting change: ecological assessment and monitoring
*Ecology and management in fragmented landscapes
*Fire ecology and management
*Water in a drying landscape
*Enhancing resilience: restoration and rehabilitation.

We also envisage a panel discussion based around the conference theme.
Please e-mail Sabine Wilkens for a registration form. Officially, registrations have to be in by May 9.